

**AWARD WINNING TQM IMPLEMENTATION: A WORTHWHILE GOAL FOR
THE FIRE SERVICE**

EXECUTIVE PLANNING

**BY: LARRY NELSON, EMT-P, MAEd.
GRAND ISLAND FIRE DEPARTMENT
GRAND ISLAND, NEBRASKA**

**An applied research project submitted to the National Fire Academy as part of the
Executive Fire Officer Program
December 1999**

ABSTRACT

The Grand Island Fire Department (GIFD) made the decision to transform the organization into one that is customer oriented, mission driven and employee empowered. The problem was that a recently submitted strategic plan, did not address further improvement of the organizational quality, culture, and service delivery. The purpose of this research was to identify methods and strategies to assist with improving these areas of the Department.

Evaluative research was utilized, and the specific research questions asked were:

- (1) What quality management practices are currently in place for the GIFD?
- (2) What value may exist with implementation of Total Quality Management (TQM) practices for this organization?
- (3) What methods or strategies are available for implementing TQM?
- (4) How do the members of the GIFD feel about delivering quality services?

Procedures used for this study included a literary review, an interview with a representative from an organization recently awarded a State of Nebraska Quality Award, and a survey was conducted of Department members.

Major findings of the study produced an understanding of TQM benefits, and that several necessary components are now in place for adoption. A suggested method for implementation is to follow the outlined criteria from an organization sponsoring a quality award; all 50 States now offer these. The GIFD members do not perceive a commitment to delivering quality services from the chief officers, but believes that the Department can become a recognized leader as a quality service provider.

Recommendations from the study include incorporating these findings into the Departmental Strategic Plan; developing a policy statement on quality, for inclusion into

revised mission and vision statements; department-wide use of statistical process controls; creating an awards program for employee and citizen recognition. Continue providing member input opportunities, and continuing training on customer service. With TQM implementation, an application should be made for the Nebraska Edgerton Quality Award.

TABLE OF CONTENTS

ABSTRACT	ii
TABLE OF CONTENTS	iv
INTRODUCTION	1
BACKGROUND AND SIGNIFICANCE	2
LITERATURE REVIEW	3
PROCEDURES	9
RESULTS	15
DISCUSSION	22
RECOMMENDATIONS	25
REFERENCES	28
APPENDIX A	30
APPENDIX B	32
APPENDIX C	40

INTRODUCTION

In 1997, the executive staff of Grand Island Fire Department made a decision to initiate a transformation process of the Department. It was decided that leadership would begin turning away from its traditional management practices that in retrospect, my personal observation can best describe as being somewhat micro-managed, and with primarily top-down decision making. This decision was reached after being exposed to benchmark agencies, both public and private that were introduced to students attending the NFA as part of the Executive Fire Officer Program (Nelson, 1998). In so doing, the Department developed mission and vision statements, created new committees and quality circles in addition to those already in place, began focusing on both their internal and external customers, and developed an employee orientation manual.

Beyond these initial steps however, the problem that existed was a lack of a strategies and methods to further improve the organizational quality, culture, and service delivery by the GIFD. The purpose of this research was to identify methods and strategies to assist with continued improvement for the delivery of quality services, cultural change, and organizational quality. Using evaluative research methodology, this study attempted to answer the following questions:

1. What quality management practices are currently in place?
2. What value may exist with implementation of TQM practices for this organization?
3. What methods or strategies are available for implementing TQM?
4. How do the members of the GIFD feel about delivering quality services?

Finally, from an open-ended survey question submitted to Department members, it was hoped that further insight would be gained into perceived problems, attitudes, and possible solutions to existing problems might be offered.

BACKGROUND AND SIGNIFICANCE

Within the year of 1998-1999, several, unprecedented and dramatic events were enthusiastically observed by the members of the GIFD. During the middle of the fiscal year, a budget amendment was unanimously passed by the City Council for an infusion of additional funding as requested by the Fire Department. These monies were earmarked to purchase badly needed equipment and apparatus including two new engine companies (pumper trucks), two new ambulances and additional rescue equipment. Moreover, budget approval was given beginning with the next fiscal year to purchase a platform-aerial truck; one additionally equipped, paramedic ambulance; additional fire/rescue gear; plus, six badly needed, full time employees that are to serve as additional firefighter/paramedics for the Department (City of Grand Island [CGI], 1999).

The exact impetus for this change is unclear. A surplus of general funds resulting from increased City-wide receipts, years of budget frugality, sales tax revenues exceeding projections, and a change of key administrative and council members, may all have contributed to the Department's recent good fortune (Overstreet, 1999). However, fire department members are hoping that these approved budget requests, are also resulting from several recent changes made within the organization.

Paramount of these changes, was a five-year, strategic plan developed by the GIFD executive staff that was then submitted to Council (Hughes, T., Nelson, L., Rowell, J., Schmitt, H., & Thuernagle, S. 1999). This plan provided an opportunity for the general public, City officials, and City Council to have a detailed and intimate look into the operations, troublesome aspects of meeting public demands, future needs of the Department, and a much clearer picture of the many services it currently provides. The basic outline used for this strategic plan was developed from

(in part), and as described in Module 4 of the student manual used in the Executive Planning course, as taught at the National Fire Academy in June, 1999.

The problem is that the current GIFD Strategic Plan does not provide methods nor strategies for continuing improvement of organizational culture, quality and service delivery. This study is hoped to be significant for the Department in several ways. This research will identify additional methods and strategies to assist with continued change of the organizational culture and improving service quality. The study will also help to identify Department strengths and weaknesses as perceived by Department members as well as suggestions offered for improving the quality of service delivery.

LITERATURE REVIEW

What Is Quality?

To begin a discussion regarding the delivery of quality fire service we should first understand the term. Perhaps the best description of quality found for this study is “that quality is a never-ending process of continuous improvement” (Elmuti and Kathawala, p. 8). From other research, Oakland (1993) found quality as defined by these experts to be:

- ‘Fitness for purpose or use’ – Juran.
- ‘The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs’ – BS 4778, 1987 (ISO 8402, 1986) *Quality Vocabulary*: Part 1, International terms.
- ‘Quality should be aimed at the needs of the customer, present and future’
– Deming.

- 'The total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service in use will meet the expectation by the customer' – Feigenbaum.
- 'Conformation to requirements' – Crosby (p. 5)

Similarly, for a fire department to define and then provide quality customer service, one source argued that there are "two prerequisites to improving quality: perceiving those whom the department serves as 'customers' and developing a deep understanding of the customers' expectations" (Brown, 1992, p. 2). The central theme found throughout this study regarding quality and how to define it, is that the customer needs should be both met and then exceeded.

Perhaps not the first to do so, Amsden, Butler and Amsden (1991) suggested another important principal regarding the customer; that is, two types exist. In addition to the (external) or final, there is also an internal one that is the employee. Input is also required from this internal-employee-customer, in order to achieve quality services. This requirement "is based on the premise that the people doing the job know best how to do it better" (Emulti and Kathawala, 1999, p. 6). For the fire service this means that "a firefighter knows best how to do the job of a firefighter, or similarly, a company officer knows best how to do the job of a company officer" (Murry, 1998, p. 16).

Service Quality History

Studies focusing on methods for improving the quality of fire service delivery are not new. Paulsgrove (1990) offered a flow chart model, Van Benschoten (1991) and Wendelsdorf (1993) developed customer survey forms, Brown (1993) focused on the importance of understanding how the customer perceived service quality, Ross (1997) recommended implementing TQM, and Brown (1991) taught elephants to dance!

Long before this however, Dr. W. Edward Deming is generally credited with introducing a workable approach to producing goods and services while emphasizing quality (Ross, 1997, p. 7). The concepts that Deming taught to the post WWII Japanese regarding quality and usage of statistical data, was well received. After successfully implementing the Deming philosophy, the Japanese honored and credited him with helping them to restore their war ravaged country and then become a worldwide industrial leader for producing many types of quality goods, when they “established the Deming Prize” (Walton, 1986, p.15). Since then, other Quality Awards have been created, and will be discussed later in this paper.

In his 1986 book, Out of the Crisis, Deming gave 14 points that must be adhered to for implementing TQM. Similarly, two other authors regarded as quality management experts have also identified similar steps for quality improvement. Oakland (1993, p.442-443) compares the similarities and differences of Philip B. Crosby and his 14 steps to quality improvement with Joseph M. Juran’s 10 steps of quality improvement, to those management points outlined by Dr. Deming. While these points of quality may have been developed primarily for the private sector and manufacturing firms, public services agencies can also benefit from these concepts.

TQM Components

One constant for insuring quality for a service organization and is discussed by all three quality experts is the important role every employee plays. Creating quality circles, quality councils and involving the employee in the decision making process are central to TQM. Brown (1993) found that “the role employees play in improving quality would prove as important to service providers as it was to manufacturers (Peters & Austin, 1986).” (p. 3)

In a study of five small businesses achieving great success with TQM, Hodgetts, Kuratko & Hornsby (1999) found five key areas they believe to be “critical to the success of firms trying to

become best in their class. These include top management support, focus on customer needs, training employees, empowering employees, and generating new ideas” (p. 3). In this same study, Hodgetts et al., found each of these quality award-winning companies has some type of employee recognition system in place. This “recognition takes a number of different forms including financial rewards, days off, vacation trips, choice parking spots (typically for a week or a month), pictures placed on the ‘Employee of the Month’ wall, and names added to a plaque of distinguished employees” (p. 7).

Another component of TQM that is viewed as a tool or technique used in striving to improve service delivery is by utilization of statistical process control (SPC) as offered by Amsden, et al. (1991). Data, should be used whenever possible to aid in the decision making process. Although a consultant and educator on quality methods, Deming was a really a statistician that was honored by the Japanese when they created the Deming Prize in 1951. “A silver medal engraved with a profile of Dr. Deming-to be given in two major categories: to an individual for accomplishments in statistical theory and to companies for accomplishments in statistical application” (Walton, 1986, p. 15).

Currently, a wealth of information supporting TQM is available and many similar comments and quotes can be found supporting TQM. Good (1998) identified one company that believes TQM is allowing them to create a culture that both attracts and then retains employees. Elmuti and Kathawala (1999) offered another such example:

TQM offers a process and a system that can enable small service business to better serve their customers. At the same time, it empowers employees to become more involved in defining problems and implementing changes that affect the quality of their operations and

the services they offer. The advantages of a TQM system are both qualitative and quantitative, as the firm becomes more proactive rather than reactive (p. 7).

Evidence of TQM success in the public sector can also be found today. One source described the Social Security System's telephone system as "better than organizations such as L.L. Bean whose fortunes are tied to their phone responsiveness" (Streubing, 1997, p. 17). Moreover, Jackson (1999) described several benefits of TQM being experienced by the City of Auburn, Alabama after its City Manager implemented broad use of quality circles throughout their municipality. Within the Auburn Finance Department they have seen a drop in "payroll error rates by 25%, budget preparation time reduced by 33%" (Jackson, 1999, p.6), and several other measured benefits since the creation and implementation of TQM within their local government.

Problems with TQM

In spite of many positive remarks found in the literature about the wonders TQM can do for an organization, warnings have been issued, problems have been outlined, and recurring themes of failures were also discovered. One such statement "argues that TQM suffers from a built-in desirability bias in favor of teams and empowerment. Such a bias is introduced more by a taken-for-granted assumptions about the role of teams and team culture than by any hard empirical evidence or theoretical arguments" (Korunda, Watson, and Rajkumar, 1999, p. 1). Another example is that "TQM is not a quick fix for all corporate problems [...] TQM is difficult to implement as it requires major organizational changes" says Dr. Vinod Singhal (Saccomano, 1998, p.1). "TQM appeals to faddism, egotism, and quick-fixism. Accordingly, it is nothing more than a 'technique' managers feel they must use because it has been adopted in one form or another in a significant number of other organizations" (Korunda, et al. p. 6). In research conducted by Myers (1998), the most commonly occurring problem of TQM is the failure of management to tie

compensation with achieving organizational quality goals. “However, Deming warned of the evils of merit pay systems in his ‘Seven Deadly Diseases’ that stand in the way of transformation” (Myers, 1998, p. 1). Ross (1997) also admonished the merit pay system, and found it to be both problematic and prevalent in the fire service. Issues may also develop when attempting to implement TQM into a unionized workforce as discussed by Reshef and Lam (1999) and suggest that more study may be needed in this area. Zbaracki (1998) provided a discussion contrasting the rhetoric used by various levels of an organization when implementing TQM as opposed to the realities of its implementation if viewed from a technical perspective, and warned that some managers are only giving lip-service to bringing it into their organization.

Methods and Strategies to Implement TQM

It is evident that implementation of TQM into an organization can be a difficult task. “The first decision is where to begin, and this can be so difficult that many never get started. This is called TQP- total quality paralysis!” (Oakland, 1993, p. 424). However, an answer to this problem has also been offered:

A framework for improvement or a guide to tell you how to start out and how you’re doing is needed. Such a framework exists in the criteria of the Malcolm Baldrige National Quality Award and in its federal counterpart, the Presidential Award for Quality. The award categories and their underlying core values define what it takes to have a successful quality system. (Struebing, 1997, p. 1)

Others agree that the Baldrige criteria provides an excellent framework for implementing TQM, and “is not the award itself, or even the fact that it is presented each year by the President of the USA” (Oakland, 1993, p. 148).

However, the Baldrige is not the only guideline, roadmap or framework currently available for TQM implementation. As previously mentioned, the Japanese-based Deming Prize was the first of many quality awards that have been created. Others that have followed include “the British Standard BS 7850 Guide to TQM, the Marketing Quality Assurance (MQA) Specification, the British Quality Award, the European Quality Award, and others not yet thought of” (Oakland, 1993, p. 148). Today, in the USA, each of the 50 states now offers at least one quality award, and all can be found on-line at www.asq.org/abtquality/awards/baldrige/state.htm.

PROCEDURES

Definition of Terms:

Continual Improvement. “Quality is a moving target [...] as perfection that is never attainable. Continual improvement means we are constantly striving to improve everything about our organization ” (Amsden, et al., 1991, p.) al., 1991, p. xvii).

Customer. Defined elsewhere, yet, for this study a customer is also defined as anyone receiving services from the Grand Island Fire Department.

Malcolm Baldrige National Quality Award. Named after a former Secretary of Commerce, this program was established by congress in 1987 to help improve the competitiveness and performance of U.S. business and other organizations by promoting performance excellence, recognizing achievements of U.S. organizations and publicizing their successful strategies. The award is not given for specific products or services. Since 1988, 34 companies have received the Baldrige award that are annually given in manufacturing, service, small business, and starting in 1999, education and health care. The criteria evaluated from an applicant or areas of focus that

are examined by judges has remained basically the same from when Main (1990) reported the director of the Award as identifying:

- A plan to keep improving all operations continuously.
- A system for measuring these improvements accurately.
- A strategic plan based on benchmarks that compare the company's performance with the world's best.
- A close partnership with suppliers and customers that feeds improvements back into the operation.
- A deep understanding of the customer so that their wants can be translated into products.
- A long-lasting relationship with customers, going beyond the delivery of the product to include sales, service, and ease of maintenance.
- A focus on preventing mistakes rather than merely correcting them.
- A commitment to improving quality that runs from the top of the organization to the bottom. (p. 108)

Process. "The transformation of a set of inputs, which can include actions, methods and operations, into outputs that satisfy customer needs and expectations, in the form of products, information, services or - generally – results. Everything we do is a process, so in each area or function of an organization there will be many processes taking place" (Oakland, 1989, p. 14).

Statistical Process Control (SPC). Data driven tools and techniques for decision making to insure continually improving service delivery.

Quality Assurance. "The prevention of quality problems through planned and systematic activities (including documentation). These will include the establishment of a good quality

management system and the assessment of it's adequacy, the audit of the operation of the system, and the review of the system itself" (Oakland, 1989, p. 16).

Quality Circles. " A group of workers meeting voluntarily, regularly, under the leadership of their supervisor, to identify, analyze, solve work related problems, and make recommendations to management" (Oakland, 1989, p. 312).

Total Quality Management (TQM). A model offered by Oakland (1993) suggests that there are five components to providing TQM. At the center of this model is an interaction between the *customer* and the *supplier*. Two types of customers exist: internal and external. During the interaction occurring between these groups a number of *processes* are ongoing. Surrounding these groups and processes there must be a *commitment* to quality that constantly meets customer expectations and should also exceed them. A continuing message found in all levels of the organization and *communicating* commitment to quality is then facilitated by teams, tools, and systems.

Research Methodology

The desired outcome of this study was to identify methods and strategies that are available for use in improving the GIFD's quality, culture, and delivery of services. The research done for this study was evaluative in that it allows us to better understand how GIFD employees perceive commitment to providing quality services. It is also evaluative by comparing member response to authoritative work regarding the provision of quality services and what quality management practices are currently in place. This project began with a literary search and review conducted at both the Learning Resource Center, NFA, and at the Edith Abbott Public Library in Grand Island, Nebraska. Much of the literary review was electronically achieved *on-line* using the educational search engine "Wilson Select." (See References.)

The second desired outcome of this research was to give all members of the organization a better understanding of Department strengths, weaknesses and how to better plan for the future delivery of quality services. This outcome was achieved via looking at what quality systems are currently in place when compared to the response solicitation of member attitudes and perceptions regarding commitment to delivering quality services.

Literature Review

What is the best way to change the culture of an organization into one with motivated employees that are constantly striving to improve the quality of services they provide? What methods or strategies can be implemented to create a workplace that is continually focusing on the customer? Is implementing TQM really the answer and solution to these questions and problems? Moreover, if TQM is the answer to these questions, how or where does one begin? These were the types of questions addressed by others and used for the literary review conducted in this study. Being authoritative, timely and similar to the problem studied for this paper, they were selected for this reason.

Survey Instrument

A survey instrument was developed consisting of eight questions using primarily a standard five-point scale, with 1 indicating “strongly agree” to 5 indicating “strongly disagree,” and one open ended solicitation that provided opportunity for additional input. One question requested familiarity with a concept, with 1 indicating “very familiar” to 5 indicating “never heard of it.” (See Appendix A.) The survey is a tool that essentially helped to quantify the perceived attitudes from a random sampling of Department members about (1) the provision of quality services? (2) How they perceive the commitment to providing quality services throughout all levels of the organization? (3) How familiar the respondent is with TQM? (4)

How an outside departmental audit for service quality delivery would be received? (5) If the members believe the Department to be capable of becoming recognized as a Nebraska leader in quality service delivery?

In addition, an open-ended invitation to respond would also help identify member perceived problems, possible answers to problems, other insight into attitudes about the implementation of TQM into the Department, and other ideas about how to improve organizational quality and service delivery. The comments and textual type answers are shown in their entirety in Appendix B.

Interview

A personal interview was also conducted for this study. It was done with Jane Clifton, Administrator of the Tiffany Square Care Center, Grand Island, Nebraska. Ms. Clifton was asked to participate in this study as the leader of an organization having been recently honored as recipient of the 1999 - Nebraska Edgerton Quality Award. (See Appendix C.) As administrator of an organization now recognized Statewide for their success and commitment to utilizing TQM, any advice offered, guidelines suggested, or other information given in such an interview could prove beneficial for this research and future Departmental planning.

Analysis of Data

Of the currently employed 62 Department members, excluding one civilian secretary, and myself, the survey instruments were distributed to each of three, 24 hour shifts. Staffing during this three-day interval (including chief officers) was limited to 50 members. However, the survey instrument was assured validity when a 95% confidence level was obtained as a total of 46 out of 50 surveys are completed, thus, giving a (92%) return. Similar to a Departmental study

previously performed (Nelson, 1998), after complying all data, an analysis was conducted to determine possible trends, patterns, and other findings of interest.

Limitations

One limitation of this study might include the survey instrument that was used. While the questions asked and the respondent answers are believed to ultimately benefit this project for future planning purposes, these same questions might also be considered as being perhaps too elementary or too few for a detailed analysis of the subject. The survey was not validated by any authoritative, outside agency. Given the comments, (See Appendix B) and following results, another concern exists over the truthfulness or apathy for some of the respondents when answering. It was also assumed that that all participating in the study understood the questions they were asked to rate.

An additional limitation is from two poorly worded questions in the survey. Question # 5 may be problematic in that it can be perceived as a two-part question. The intention however, is to basically ask the same thing of the respondent though it is stated in two different ways. Another troublesome aspect of survey question #5 is the ambiguity of the choices offered as responses. Specifically, to answer as being *familiar* with TQM can be construed as similar, and with much the same response as having *heard of it*.

Similarly, a problem with question # 6 is that two different things may also be perceived as being asked of the respondent. Moreover, the questionnaire failed to ask how the respondent felt about TQM as a management practice for the GIFD. An assumption was made in this survey question that support for TQM may already exist and goes directly into an inquiry of how implementation may best be accomplished.

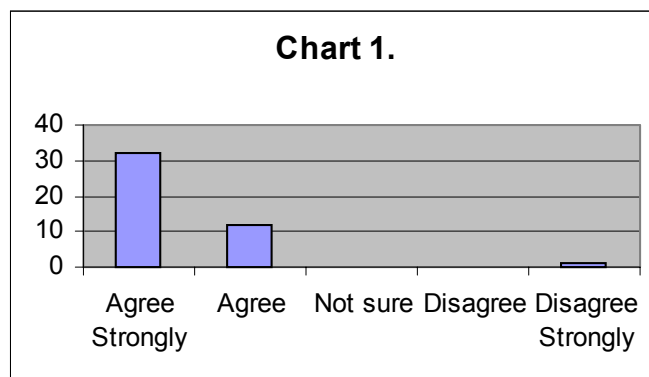
Another limitation possibly effecting this study is that only one individual (myself) evaluated the data. Additional expert assistance, including statistical analysis, may have helped to more accurately describe the findings.

RESULTS

Research Question # 1: Do you believe the GIFD should be committed to providing quality service?

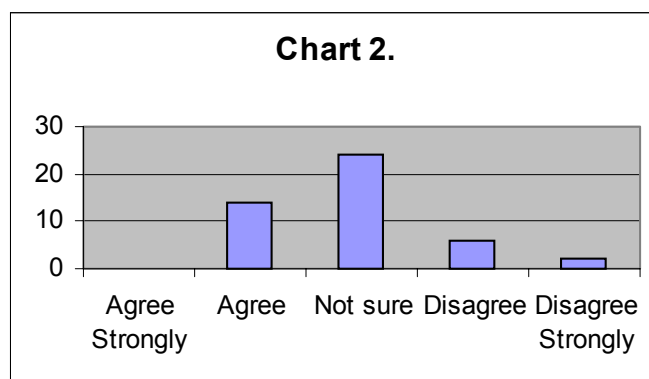
The majority (See Chart #1) or 32 out of 46 respondents, and resulting in 69%, strongly agreed that the Department should be committed to providing quality services. When combined with 10 others who agreed with this question, a total of 91% believe that the GIFD should be committed to providing quality services. One respondent strongly disagreed and we can only speculate why such a strong belief may have emerged. However, the term quality is somewhat ambiguous and may mean something different to each individual. “Quality has numerous definitions” (Amsden et al., 1991, p. xix).

For whatever the reason(s) one respondent did not answer this question, yet, did respond to the other questions, and may have simply been a missed question.



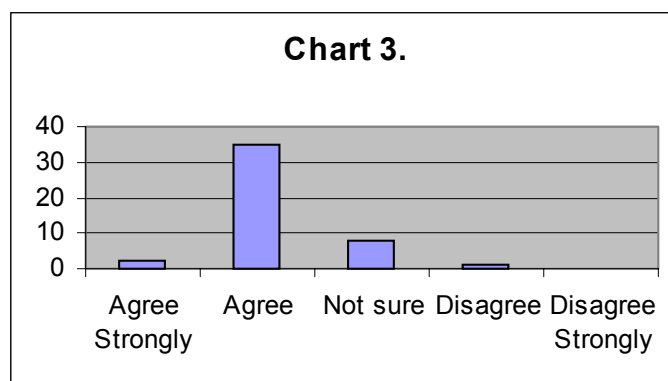
Research Question # 2: Do you believe the GIFD chief officers are committed to providing quality services for the Grand Island citizenry?

After tabulating the results, it was found that all 46 respondents answered this question (See Chart #2). The results revealed that 14 agreed for a 30 % total. However, 52 % of the respondents or 24 were not sure. Six respondents or 13 % disagreed, and do not believe that the chief officers of the GIFD are committed to providing quality services for the citizenry. Two respondents were found to strongly disagree and when combined with those that do not agree, almost 18 % do not perceive a commitment from the chief officers in providing quality service delivery from the Department. In other words, a full 69% of participating members from this study are either unsure about chief officer commitment or do not perceive this group as having a commitment to providing quality services for the citizenry.



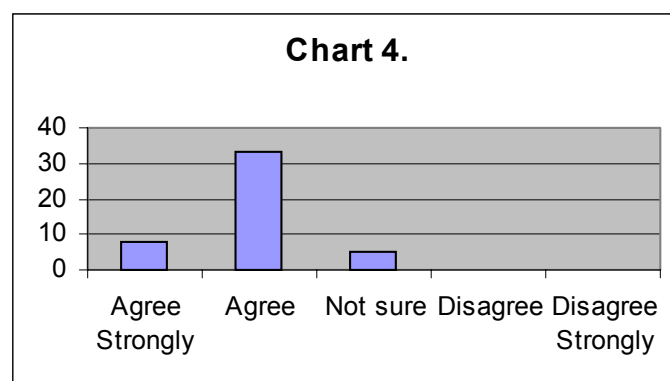
Research Question # 3: Do you believe GIFD Captains are committed to providing quality services?

Tabulated results from this question showed all respondents electing to participate and answer this question. From the responses, it was found that the majority of participants perceive a commitment to providing quality services from the GIFD Captains (See Chart #3). Two respondents, (4 % total) strongly believe this to be true. While thirty-five members participating in the questionnaire (76 %), agree that the GIFD Captains are committed to quality service delivery. However, eight respondents (17 % out of the 46 participant members) are not sure of the existing commitment level of the GIFD captains. One individual for 2 %, disagreed. These results reveal that in spite of a widespread perceived Captain commitment level for providing quality service delivery, one out of every five participating survey members of the GIFD, or 20% are either not sure about this or disagree.



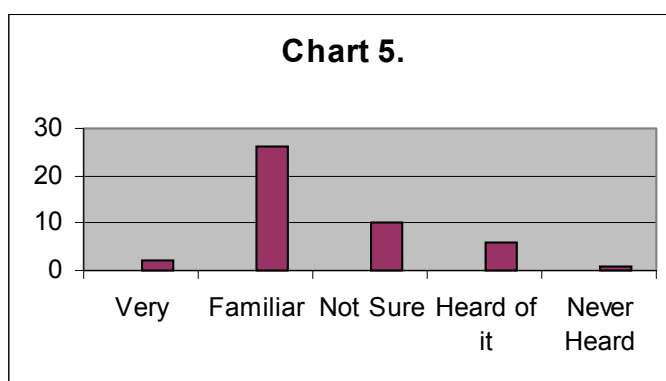
Research Question # 4: Do you believe the firefighters and paramedics are committed to providing quality services?

As previously stated, the staffing levels occurring during the three day period for this study, produced respondents totaling 29 out of 46 or 63 % that were known to be either a firefighter or a firefighter/paramedic. We also know from staffing levels during this same period, that only 15 members could have been officers that were given an opportunity to participate in the research. Knowing this may help to better understand who and what level in the organization these participants were operating from when answering this or other survey questions. The tabulated results to question four also reflect a perceived commitment for the provision of quality service delivery by the firefighters and paramedics (See Chart #4). Eight individuals strongly agreed, and 32 were also in agreement for a combined total of 86% having a perceived commitment to the provision of quality services currently in the Department by these members. Only five (11%) were not sure about the commitment level of this group. After tabulating the results from survey question # 4 via a manual count, it was determined that one respondent failed to participate in answering this question.



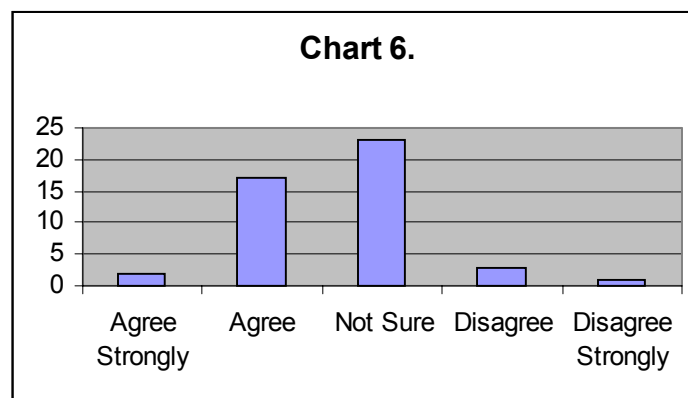
Research Question # 5: Do you have knowledge of and are you familiar with the concept of Total Quality Management (TQM)?

All respondents answered this question (See Chart #5). Sixty-seven percent or 31 GIFD members stated they are either very familiar with TQM (two total), and the remaining number (29) of this combined group of respondents stated that they are familiar with the concept. Eight participants of the survey (17 %) were not sure of their familiarity with TQM, while six members stated that they had only heard of the concept, and resulting in 13 % of the total group that believe this to be true. Only one respondent claimed to having never heard of TQM. The Department has recently begun to introduce the concept of TQM to members via a discussion following the viewing of the In Search of Quality Series by Scott/Tyler (1991). Not all members are always able to participate in all sessions due to vacations, Kelly Days, and other excused absences. Thus, the combined group from this survey (15 out of 46) or 32%, were either not sure of their familiarity with TQM, had only heard of the concept or was totally unfamiliar, and may not have been present for this training.



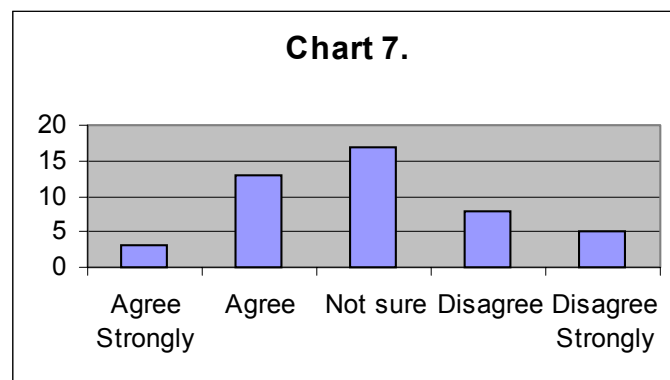
Research Question # 6: Do you believe the GIFD should follow the criteria as outlined for the Nebraska Edgerton Quality Award and then use this criteria as a framework and guideline to implement Total Quality Management for the Department?

A combined total of 36 % of the respondents either agreed (17) or strongly agreed (2) that the Department should follow the prescribed guidelines of the Edgerton Award for implementation of TQM into the GIFD (See Chart 6). Exactly half of all respondents participating in the questionnaire (50%), that is, 23 out of 46 were not sure that the Edgerton criteria should be followed. Disagreement for adopting TQM in this manner was given by three respondents, and one individual strongly disagreed for a combined total of nine percent. As previously stated, an assumption is made with this (and all) questions that the respondents understood what was being asked of them. Because no training has taken place regarding the outlined steps for TQM as prescribed by the Edgerton Award, it is understandable why members would express reluctance for adopting these.



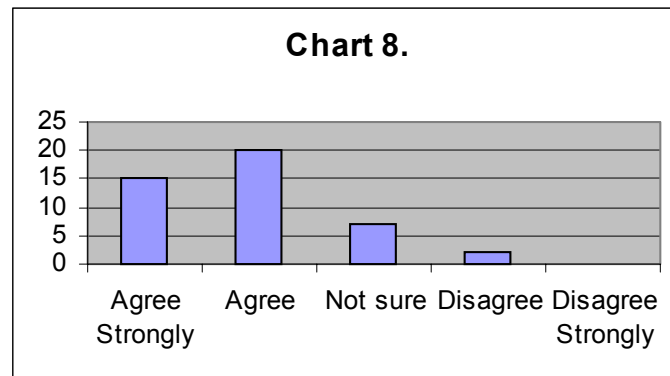
Research Question # 7: In the future, do you believe there could be merit in having an outside agency come into the GIFD and evaluate the Departments commitment to providing quality services?

The results of this question once again revealed that all respondents elected to answer (See Chart 7). A combined total of 17 members or 36 % either strongly agree (3) or agree (14) with having an outside agency evaluate the GIFD commitment to quality. Sixteen respondents were not sure of this however, for a total of 34 %. Furthermore, tabulated results from this question produced a total of 28 % that either disagreed (8) or strongly disagreed (5) to having an outside agency evaluate the Department for it's commitment to quality. In other words, 63 % of the respondents are either not sure of the benefits for this or are in disagreement. These findings are understandable given the results of the final open-ended question and comments found in their entirety in Appendix D.



Research Question # 8: Do you believe that an agency such as the GIFD is capable of being formally recognized as a Nebraska leader in providing quality services?

Again, the results of this question revealed that all respondents answered this survey question (See Chart # 8). Results revealed that a combined majority of participants (80 %) believe that the GIFD can become a recognized leader in the State of Nebraska as a provider of quality services. A total of 16 members strongly agreed with this and 22 others are also in agreement. Six respondents are not sure of this however, and two disagree. Worth noting, is that in reviewing each survey form from this study, a total of 13 respondents were not sure of having an outside agency evaluate the Department from question # 7. Yet, of these same 13 respondents, six either agreed or strongly agreed (7) to being recognized as a leader in providing quality services that is asked in survey question # 8. Moreover, of these same respondents, all strongly believe the GIFD should be committed to providing quality services from question # 1.



DISCUSSION

From these findings, it would seem that a strong belief exists among Department members that the GIFD should be committed to providing quality services. The results also produced an understanding that the majority of Department members perceive a commitment to quality from the captains, firefighters and paramedics. From the literary review, these findings would seem to be supported. “Individual workers are seen as willing to do a good job and having good ideas on how to improve quality” (Korunda, et al., 1999, p. 5).

The study found that GIFD members have little problem with being recognized as a Nebraska leader in quality service delivery as evidenced by 80% of the respondents in agreement. Yet, another 63 % of these same members have concern in having an outside agency perform an audit or evaluation of the Department. These findings suggest a lack of understanding by a majority of the survey participants that recognition as a State leader committed to quality, can only come after first being evaluated. Moreover, this evaluation is part of a process that occurs as a result of having a site visitation from an outside agency according to Jane Clifton (Appendix C). Also offered by Clifton, is one answer to this problem, and that is by communicating to all levels of the organization of the intent to apply for a quality award. Moreover, Main (1990) suggests that by making application for a quality award, and “merely entering the contest creates a competitive urgency that sharpens a company’s quality efforts” (p. 101).

One alarming finding from this study is that over 50% of the members question or have uncertainty regarding the commitment levels from the GIFD chief officers in providing quality services. The literature suggests resolving this problem as Korukonda,

et al., (1999) found in Brown's 1993 research that two-thirds of American companies fail when implementing TQM programs. To avoid becoming a future failure statistic, and for TQM implementation success, "management must demonstrate its commitment through deeds, personal involvement in the service program, and maintaining close contact with those responsible for implementing quality service" (Elmuti & Kathawala, 1999, p. 6).

Results from the literary review also support those comments made during the interview with Jane Clifton regarding TQM implementation. The benefits of having accomplished this for her award winning organization have been numerous (See Appendix C). The literary review also supports the TQM components already in place for the GIFD, as well as those that have been recently implemented such as having a strong focus on customer service. This is very similar to how the City of Auburn, Alabama now is attempting to "provide high quality services by maintaining a constant focus on the customers' viewpoints and needs" (Jackson, 1999, p. 17).

Oakland (1993) discussed the importance and effectiveness of quality circles for almost any organization. The GIFD Safety Committee was long ago established to help identify problematic areas of service delivery by better protecting the employee and public. Since then, several other quality circles have been created in the Department to further improve service delivery, and are also now being empowered to develop policies and procedures for ice and water rescue, emergency scene personnel accountability, and by designing specifications for recommended equipment and apparatus purchases. The newly formed EMS Quality Council is empowered to effectively oversee and shape most every aspect for these specific services. Though perhaps not all GIFD members may yet fully understand that these teams are all helping to change the quality and hopefully

improved culture for this Department. “The culture we have now was caused” (Crosby, 1984, p. 99).

Amsden, et al. (1991) has offered practical SPC tools that are now being utilized by the Department. As a mentor and quality professional, the flow charts and data analysis service being offered by the Quality Improvement Coordinator from Saint Francis Medical Center, Sandy Wright, RN, are helping to improve EMS. “As the old saying goes, what gets measured gets improved” (Tatikonda, O’Brien, Tatikonda, 1999, p. 5).

The results also suggest the merits of using as a guideline for TQM implementation, the application criteria for a Baldrige-like quality award such as the Nebraska Edgerton. As pointed out by Clifton (1999):

It helped me better understand quality principals by having to answer the questions in regards to the Edgerton application and it was a growth process for both, my staff and me (Appendix C).

Another finding is the importance of developing an agency wide policy and commitment to quality. Ross (1997) made this recommendation and Crosby (1984) stated it very clearly, “The purpose of the quality policy is to make certain that everybody understands it” (p. 169). By so doing, all aspects of an organization will eventually be examined.

RECOMMENDATIONS

As we prepare to update the GIFD Strategic Plan, the findings from this study should be incorporated. A policy on quality should be developed and brought into all aspects of the organization. While our mission and vision statements are good, they can be improved upon with an emphasis on quality. A listing of our core values need to be developed with input from all levels of the Department and also incorporated into the plan.

Continuing employee empowerment efforts and improving communication for some of our officers may help them overcome a lingering uneasiness or concern with these new methods. Some members still feel it important to get permission in taking care of daily tasks like equipment repair and more training may be needed here.

If we truly adopt TQM for this Department, we may want to contact all vendors and suppliers for our services and state our expectations from them. Recently, a replacement wheel cover for one of our ambulances had to be shipped back to the manufacturer three times in order to get the right replacement. Any company that is a supplier to our Department that isn't constantly striving for zero defects are also wasting our valuable time. Beside ourselves, we should demand quality from everyone, as Dr. Deming and all the quality experts have made this very clear.

Why are half of the members not convinced about executive staff commitment to quality? While it is encouraging that 30 % of the members participating in the survey do not see this as a problem, the 52 % not in agreement are far to many. This problem must be corrected for successful TQM implementation.

We need members (including myself) to take an upcoming class on SPC software training that is to be offered at the community college. We must become more self-sufficient and not so reliant on Sandy Wright, RN, for this assistance. There are many processes beside just EMS activities that requires these types of controls be in place.

We need to implement an awards program, possibly held on an annual basis. We could create an employee of the month award or a member of the year award, an annual Chief's Award or other meaningful awards for our valued members could be developed. Employee recognition plaques could be prominently displayed in each firestation to recognize significant contributions by deserving members. From this study, there is indication that member morale may improve with this type of recognition. Besides patting ourselves on the back at such an event, at the same time we could give out citizen CPR awards, recognize any citizen fire prevention efforts, or other agency contributions as well.

A great deal of frustration is evident from the comments offered by these survey participants. We must persevere in our efforts to replace worn out vehicles and equipment. Every attempt must be made to now take advantage of any excess general reserves funds, as this window of opportunity may not last. I recommend that this report be made available to City Council, and those who control the purse strings.

If a decision were made to fully implement TQM into the Department, it would seem that following the application criteria for the Edgerton Award could best facilitate this. Once accomplished, and down the road several years from now, it is recommended that an application be submitted for an award consideration. In addition to knowing if the

combined Department efforts have been successful, what better way to acknowledge and credit the City and our members, than with such a prestigious award?

REFERENCES

- Amsden, D. M., Butler, H. E., & Amsden, R. T. (1991).
SPC simplified for services: Practical tools for continuous quality improvement. NY:
 Quality Resources.
- Brown, A. K. (1993). Service-quality evaluation of the silverthorne (co) fire protection district. (Report No. 22861). Emmitsburg, MD: National Fire Academy.
- Brown, D. E. (1991). Customer service and company inspections: Teaching the elephant to dance. (Report No.18271). Emmitsburg, MD: National Fire Academy.
- City of Grand Island. (1999). Annual budget: Fiscal year 1999-2000 and program of municipal services. Grand Island, NE.
- Crosby, P. B. (1984). Quality with out tears: The art of hassle-free management. NY: McGraw-Hill.
- Deming, E. W. (1986). Out of the Crises. Cambridge, Mass.: Massachusetts Institute of Technology.
- Elmuti, D. S. & Kathawala, Y. (1999). Small service firms face implementation challenges. Quality Progress, 32, [on-line] Available Wilson Select:
<http://bart.prod.oclc.org:3057/FETC>.
- Good, W. A. (1998). Developing a worker-friendly workplace: how one association's model for a motivating environment engages staff and appeals to prospective hires. Association Management, 50, 30-33.
- Hodgetts, R. M., Kuratko, D. F. & Hornsby, J. S. (1999). Quality implementation in small business: perspectives from the Baldrige Award winners. Advanced

Management Journal, 64. [on-line]. Available Wilson Select:

<http://bart.prod.oclc.org:3057/FETC>.

Hughes, T., Nelson, L., Schmitt, H., Rowell, J. & Thuernagle, S. (1999). Strategic plan for the Grand Island fire department. City of Grand Island, NE.

Jackson, A. (1999). Applying TQM principals to the finance department: the city of Auburn experience. Government Finance Review, 15. [on-line]. Available Wilson Select: <http://bart.prod.oclc.org:3055/FETC>.

Korukonda, A. R., Watson, J. G. & Rajkumar, T. M. (1999). Beyond teams and empowerment: a counterpoint to two common precepts in TQM. Advanced Management Journal, 64. [on-line]. Available Wilson Select: <http://bart.prod.oclc.org:3055/FETC>.

Main, J. (1990). How to win the Baldrige Award. Fortune, 121, 101-116.

McIntosh, P. (1994). Customer service the fire service tool. (Report No. 23760). Emmitsburg, MD: National Fire Academy.

Murry, L. (1998). Every firefighter the chief. ISFSI-The Voice, 27, 13-16.

Nelson, L. (1998). Quality services: Pledge of the Grand Island fire department. (Report No. 27935). Emmitsburg, MD: National Fire Academy.

Oakland, J. S. (1993) Total Quality Management: The route to improving performance. (2 ND ed.). NJ: Nichols.

Overstreet, T. (1999, May 20). Grand Island sees 9 million reserve fund. The Grand Island Independent, p. A1.

- Paulsgrove, R. F. (1990). Development of a model to implement customer service methodology in a fire service regulatory process. (Report No. 16017). Emmitsburg, MD: National Fire Academy.
- Reshef, Y. & Lam, H. (1999). Union responses to quality improvement initiatives: factors shaping support and resistance. Journal of Labor Research, 20, 111-131.
- Ross, D. H. (1997). Total quality management for the Richardson fire department. (Report No. 25266). Emmitsburg, MD: National Fire Academy.
- Saccomano, A. (1998). TQM works over time. Traffic World, 255. [on-line]. Available Wilson Select: <http://bart.prod.oclc.org:3057/FETC>.
- Scott/Tyler, Enterprise Media. (1991). Quality through people: A videotext of the continuous improvement process. [Review of the video program In Search of Quality]. Volume one.
- Struebing, L. (1997). ASQ testifies on TQM in government. Quality Progress, 30, 17.
- Tatikonda, L. U., O'Brien, D. & Tatikonda, R. J. (1999). Succeeding with 80/20. Management Accounting, 80. [on-line]. Available Wilson Select: <http://bart.prod.oclc.org:3057/FETC>.
- Van Benschoten, G. (1991). A customer service survey for the Ithaca, New York fire department. (Report No. 18673) Emmitsburg, MD: National Fire Academy.
- Walton, M. (1986). The Deming management method. NY: Putnam.
- Wendelsdorf, M. W. (1993). Development of a customer relations form for the fire service. (Report No. 023297). Emmitsburg, MD: National Fire Academy.
- Zbaracki, M. J. (1998). The rhetoric and reality of total quality management. Administrative Science Quarterly, 43, (Sept.) 602-636.

Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.fema.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.